

Total mesorectal excision for all rectal cancers?

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THE PRIMARY GOAL OF SURGERY for rectal cancer is to cure the disease while preserving normal anal function. Total mesorectal excision (TME), advocated by Heald and others,^{1,2} involves sharp dissection under direct visualization of the plane between the endopelvic fascia and the rectum circumferentially, removal of the mesorectum with its fascia propria, and preservation of the pelvic fascia and the autonomic nerve plexus. As originally intended, TME was advocated for curative surgical resection of cancers of the middle and lower third of the rectum and as such has been widely adopted as the standard surgical technique for these tumors. Interestingly, as van Duijvendijk et al have reported in this issue, TME has also been performed for cancers of the high rectum; the ramifications of this approach are the subject of our comments.

Local recurrence after TME ranges between 0% and 13% with most reports being in the ~6% to 9% range. In the most recent report from Norway,³ patients treated by TME ($n = 1395$) experienced fewer local recurrences compared with patients in the conventional surgery group ($n = 229$), 6% and 12%, respectively. Unfortunately, no information is given whether TME was performed for all upper rectal cancers. Lopez-Kostner et al⁴ compared the outcomes of the treatment of upper rectal carcinoma ($n = 229$) in which TME was not performed with outcomes of sigmoid colon cancers ($n = 225$) and lower rectal cancers ($n = 437$). The risk of local recurrence was 1.9 to 3.5 times greater for patients with lower rectal cancer than for patients with upper rectal cancers or sigmoid cancers, who demonstrated similar outcomes.

A fundamental principle on which anterior resection was founded was the observation that distal intraluminal spread of tumor was rare and was found beyond 1 cm in only 4% to 10% of rectal cancers.⁵⁻⁷ Therefore, an ideal distal bowel margin length of 2 cm or greater (greater than 1 cm for tumors of the distal rectum) seems reasonable. Data from pathologic assessments of rectal cancer specimens with attention to mesorectal deposits suggested further that mesorectal clearance of at least 3 to 4 cm distal to the tumor⁸⁻¹⁰ and circumferential margins of at least 1 mm¹¹ should be sufficient. The main concern regarding TME is the possible increase in the rate of anastomotic dehiscence because the amount of rectum with adequate blood supply above the levators is limited, and only ~2 cm can safely be used for anastomosis. Furthermore, TME leads to loss of rectal reservoir function. This is certainly a reasonable trade-off for tumors located low in the rectum. But for tumors located high in the rectum, are total removal of the rectum and a coloanal anastomosis really necessary?

In this issue, van Duijvendijk et al describe impaired anorectal function with increased urgency, tenesmus, and episodes of passive incontinence and soiling after TME, as well as straight coloanal anastomosis in 11 patients with rectal cancer compared with healthy control subjects. This finding is expected; the lower the anastomosis, the worse the postoperative function.¹² The authors stated that this operation was done no matter where in the rectum the tumor was located. Although compliance of the neorectum increased and the distention-induced contractility diminished with time, the study documented poor functional outcome of coloanal anastomosis. J pouch and transverse coloplasty pouch have comparable bowel function after 1 year in a recent prospective randomized study, but seem to have better early functional results than does straight coloanal anastomosis.^{13,14} Many patients will still complain, however, about problems with stool evacuation, incontinence for gas and liquids, and increased frequency.

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It seems clear from pathologic studies and from these operative results, that TME to the pelvic floor for tumors located in the upper and possibly even in the proximal midrectum is not necessary.^{14,15} The results of the study in this issue confirm our suspicions¹⁴ that TME for tumors located high in the rectum is overtreatment; the poor functional results are the consequences of coloanal anastomosis performed unnecessarily. For patients with a carcinoma of the distal rectum, a standard dissection in the appropriate plane accomplishes TME as it was originally proposed.

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